

CLAIMS

1. An eraser comprising:

an elastic material of an eraser composition containing at least either a rubber component or a resin component; and

a skeleton structure containing the elastic material, from which skeleton portions on the abrasion surface of the elastic material are disconnected and separated together with the abrasion of the elastic material when rubbed.

2. An eraser as set forth in claim 1, wherein the skeleton structure is constituted by a porous structural material that is broken when rubbed.

3. An eraser as set forth in claim 1, wherein the said skeleton structure is continuous.

4. An eraser as set forth in claim 2, wherein the porous structural material is made from an organic polymer.

5. An eraser as set forth in claim 2, wherein the porous structural material has void portions in which the elastic material of the eraser composition is contained.

6. An eraser as set forth in claim 5, wherein the elastic material of the eraser composition has a filling rate in a range

from not less than 50 % to less than 100 % with respect to the entire volume of the void portions of the porous structural material.

7. An eraser as set forth in claim 2, wherein the porous structural material of the skeleton structure and the elastic material of the eraser composition are integrated into a composite part.

8. An eraser as set forth in claim 1, wherein the skeleton portions of the skeleton structure have an average thickness of 1 to 100 μm .

9. An eraser as set forth in claim 1, wherein the void portions of the skeleton structure have an average pore size of 10 μm to 3 mm.

10. An eraser as set forth in claim 2, wherein the porous structural material of the skeleton structure contains the cross sectional shape with virtually polygonal or virtually circular cells.

11. An eraser as set forth in claim 2, wherein the porous structural material is a foamed structural material.

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12. An eraser as set forth in claim 2, wherein the porous structural material is a mesh structural material.

13. An eraser as set forth in claim 11, wherein the porous structural material is a stereoscopic mesh structural material.

14. An eraser as set forth in claim 2, wherein the porous structural material has a tensile strength of not more than 3 kgf/cm².

15. An eraser as set forth in claim 2, wherein the porous structural material has an extension percentage of not more than 500 %.

16. An eraser as set forth in claim 2, wherein the porous structural material has a compression repulsive force of not less than 0.2 kgf.

17. An eraser as set forth in claim 2, wherein the porous structural material has a tensile strength of not more than 3 kgf/cm², an extension percentage of not more than 500 %, and a compression repulsive force of not less than 0.2 kgf.

18. An eraser as set forth in claim 1, wherein the eraser has a surface hardness of 50 to 80.

19. An eraser as set forth in claim 1, wherein the eraser has a sticking strength of 1.5 to 20 (kgf).

20. An eraser as set forth in claim 1, wherein the eraser has a coefficient of friction of not more than 0.8.

21. An eraser as set forth in claim 1, wherein the eraser has a rate of abrasion of not less than 1 %.

22. An eraser having a surface hardness of 50 to 80, a sticking strength of 1.5 to 20 (kgf), a coefficient of friction of not more than 0.8 and a rate of abrasion of not less than 1 %.

23. An eraser as set forth in claim 2, wherein at least one of the porous structural material and the elastic material of the eraser composition is colored.

24. An eraser as set forth in claim 2, wherein the skeleton structure is constituted by a plurality of blocks of porous structural materials.

25. An eraser as set forth in claim 24, wherein the blocks have at least one shape selected from the group consisting of

spherical, polygonal, and plate shapes.

26. An eraser as set forth in claim 1, which is an exchanging-use eraser used for at least one member selected from the group consisting of a feeding-type eraser, a knocking-type eraser, an eraser attached to an end of a mechanical pencil and an electric-type eraser.

27. A feeding-type eraser to which the eraser set forth in claim 1 is attached.

28. A knocking-type eraser to which the eraser set forth in claim 1 is attached.

29. A mechanical pencil having an end plug portion to which the eraser set forth in claim 1 is attached.

30. An electric-eraser having an eraser holder to which the eraser set forth in claim 1 is attached.

31. A method of manufacturing an eraser, comprising the steps of:

impregnating an elastic material of an eraser composition containing at least either a rubber component or a resin component into a skeleton structure so that void portions in

the skeleton structure absorb the eraser composition; and
curing the eraser composition.

32. A manufacturing method of an eraser as set forth in claim 31, wherein the skeleton structure is a porous structural material.

33. A manufacturing method of an eraser as set forth in claim 32, further comprising the step of:

after the porous structural material has been impregnated with the eraser composition, compressing the material.

34. A manufacturing method of an eraser as set forth in claim 33, further comprising the steps of:

after filling a plate-shape molding frame with the eraser composition containing at least either a rubber component or a resin component, placing the porous structural material into the molding frame so as to be impregnated; and

compressing this with a heating press.

35. A manufacturing method of an eraser as set forth in claim 31, further comprising the step of:

after the eraser composition containing at least either a rubber component or a resin component is added to the skeleton structure under normal pressures, the void portions of the

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skeleton structure as vacuums are allowed to absorb the eraser composition.

38. A manufacturing method of an eraser comprising the steps of:

adding an eraser composition containing at least either a rubber component or a resin component to a skeleton structure under vacuum so that void portions in the skeleton structure are filled with the eraser composition; and curing the eraser composition.